The System Titanium-Calcium

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Abstract

The system titanium-calcium up to 1300°C has been investigated by means of the microscope, X-ray diffraction and by chemical analyses. The titanium-calcium alloys were prepared by heating a sealed titanium container filled either with calcium or calcium and titanium powder. No intermediate phase exists in this system. The solubility of titanium in molten calcium decreases from 0.18% at 1250°C to 0.05% at 860°C. On the other hand, calcium is soluble in titanium to the extent of at least 0.13% at 1300°C. On the basis of these results, a tentative phase diagram of the titanium-calcium system is proposed. (ASM-SLA Classification: M24b; Ti, Ca)

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